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# REVIEWS AND NOTES.

*The Mortality from Cancer throughout the World.* Frederick L. Hoffman· Newark, N. J.: The Prudential Press. Pp. 826+xv.

The statistical method of eliminating error by the force of massing large volumes of data is excellently exemplified by Frederick L. Hoffman's monumental monograph on cancer; for he includes in his survey a review of statistical returns for some 26 per cent. of the total population of the world.

Vital statistics from South American cities, from African provinces, and from Balkan states at first, of course, inspire a certain amount of suspicion. Yet the paradox enunciated by F. A. Woods,—to the effect that the more faulty the original source of data the more reliable are any conclusions to which they lead in spite of such faults,—is essentially a sound one. I assume this to mean that if the probable error or the element of random deviation is large, the causes which nevertheless produce a significant correlation must be very important indeed. This of course assumes no *constant* error, and the criticism of cancer statistics is based on the suspicion that such a constant error does exist in the shape of a tendency to better diagnosis. Many statisticians, following King and Newsholme and the British Imperial Cancer Research workers, have on this ground doubted the alleged increase in this disease, but the evidence brought forward by Mr. Hoffman certainly goes far to substantiate his conviction that the increase is a real one. The combined cancer rate for a group of European and Australasian countries increased from 44.8 per 100,000 in 1881 to 90.4 in 1911. Neither the changes in age distribution nor the improvement in medical diagnosis which have taken place can reasonably be held to account for such an enormous difference. The reported death rate is low among primitive peoples and where statistics are available its recent incidence varies from a standardized death rate of between 50 and 60 for Japan and Italy to rates between 100 and 110 for Bavaria and Switzerland. In countries of the latter type its increase has now been checked. In other words the recorded cancer rate tends to approach 100 or thereabouts. All this would in general fit in fairly well with the explanation of better diagnosis, but the detailed differences as Hoffman shows point to something more.

Particularly valuable is his analysis of cancer in different countries by the part of the body affected. Thus cancer of the stomach, liver, and oesophagus (strictly inaccessible cancers) are higher in Uruguay and Japan than in England and Wales or the United States, and more than twice as high in Switzerland, Holland, Norway, and Bavaria as in the United States, while cancer of the skin (easy of diagnosis) is much higher in the United States and England and Wales than in any of the other countries mentioned above, which facts can not be explained as due to medical diagnosis. So cancer of the female generative organs (difficult of diagnosis) is nearly as common in Japan as in England, while cancer of the breast (easy of diagnosis) is a little more than one tenth as frequent. Both English and German statistics are cited to show that in the increase of recorded cancer during the past quarter century cancer of the accessible organs has played a more important part than that of the inaccessible organs. Altogether the impression made upon the reviewer by the mass of Mr. Hoffman's data is that the geographical and historical differences in recorded cancer death rates do for the most part represent real and significant biological facts.

The limits of a review forbid even a glance at Mr. Hoffman's discussion of the somewhat puzzling occupational statistics of cancer, or at his widely sweeping review of the geographical incidence of cancer throughout the civilized world. He finds evidence for a general increase in cancer as one proceeds northward and southward from the equator. He finds no evidence for inheritance of cancer or for any parasitical or communicable origin. The main purpose of the book is, however, to call attention to the fact "that the menace of cancer throughout the civilized world is much more serious than has generally been assumed to be the case" and to lay a foundation for future statistical study of the fundamental problems involved.

The last 500 pages of the work which constitute the appendices will prove of the greatest value to future investigators. They include the various approved classifications of tumors, the forms used for cancer records and questionnaires by leading English and American authorities, copies of popular circulars on the control of cancer, and a mass of statistical material copied from original official reports. Occupational cancer statistics are given for England and Wales, Hungary, and the United States (Prudential Insurance Co.). There are 85 pages of insurance statistics (English and American) largely by age and by the affected organ, 163 pages of cancer statistics for American states and cities (largely by organs), and 193 pages of foreign statistics (mostly crude cancer death rates by years). Finally there is a bibliography which occupies 18 closely printed pages.

Altogether this is perhaps the most impressive monograph which the science of vital statistics has yet produced in the United States. We owe much to Mr. Hoffman for his industry and enthusiasm in its preparation and to The Prudential Company for the broad vision and the public spirit which made possible the production and the publication of so notable a volume.

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